

USSR

UDC 576.851.2

POSTOYAN, S. T., and GRIGORYAN, C. M., Yerevan Medical Institute, and Institute of Epidemiology and Hygiene imeni N. B. Akopyan

"Properties of Bacteriocins of Pathogenic and Nonpathogenic Staphylococci"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 23, No 7, 1970, pp 107-108

Abstract: A study of 46 pathogenic and 22 nonpathogenic staphylocin-producing strains showed that they differ from one another in various physicochemical properties. For example, 32 of the 68 were able to penetrate a cellophane membrane; 28 cultures remained stable for 3 to 5 days and 40 for only 1 or 2 days. Staphylococcus cultures were more sensitive to nonpathogenic staphylocin-producing strains. Six types of staphylocins were established on the basis of comparable characteristics. It is suggested that staphylocin typing may be used for epidemiological purposes.

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1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DETERMINATION OF A MODIFIER USED IN PRODUCING CELLOPHANE
POLYETHYLENE FILM OF THE PTS 2 BRAND -U-
AUTHOR--(04)-POSTRIGAN, H.V., ISHEVSKIY, G.M., DUBOV, O.YE., GUL, V.YE.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 168-9
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES, MECH., IND.,
CIVIL AND MARINE ENGR
TOPIC TAGS--POLYETHYLENE, PLASTIC FILM, MELAMINE RESIN, FOOD CONTAINER,
ADHESION, SPECIALIZED COATING, PACKAGING MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1020

STEP NO--UR/0322/70/000/001/0168/0169

CIRC ACCESSION NO--AT0119887

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC. ACCESSION NO--AT0119887

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KJELDAHL N DETN. OF PTS 2 FILMS, MELAMINE FORMALDEHYDE RESIN (I) AND PTS 2 FILMS COATED WITH I PERMITTED DETN. OF THE AMT. OF I USED IN COATING WITH SIMILAR TO 10PERCENT ACCURACY. SUCH COATINGS IMPROVE THE ADHESION OF PTS 2 TO FRESH MEAT, FISH, ETC. AND THUS IMPROVED THE MOISTURE RETENTION BY THESE PRODUCTS WRAPPED IN THE COATED FILMS. FACILITY: MOSK. TEKHNOL. INST. MYAS. MOLOCH. PROM., MOSXOW, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INDUCED REACTIONS IN RADIOCHEMISTRY. III. EFFECT OF RADIOLYSIS
PRODUCTS ON THE COURSE OF INDUCED REACTIONS -U-
AUTHOR-(03)-POSVOLSKIY, M.I., TSIRLIN, I.I., KOCHNOV, V.A.
COUNTRY OF INFO--USSR
SOURCE--RADIOKHIMIYA 1970, 12(2), 367-73
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--RADIOCHEMISTRY, RADIOLYSIS, CHROMIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0122 STEP NO--UR/0186/70/012/002/0367/0373
CIRC ACCESSION NO--AP0132415

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132415

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTORTION FUNCTION F EQUALS $F(C) \text{ SUBO} - (I) \text{ SUBO}$, WHERE C IS THE CONVERTED ACCEPTOR AND I THE INDUCTOR, OWING TO PRODUCTS OF RADIOLYSIS IS EVALUATED BY MEANS OF MECH. EXPT. THE TRADITIONAL METHOD OF DETN. OF THE MAX. VALUE OF THE INDUCTION FACTOR IS UNSUITABLE FOR SOLNS. OF RADIOACTIVE SUBSTANCES. THE SO CALLED "DIRECT" OXID. OF Pu(IV) BY CHROMIC ACID AT ROOM TEMP. IS CAUSED, TO A SIGNIFICANT DEGREE, BY THE INDUCTION REACTION Cr(VI) PLUS HNO SUB2 PLUS Pu(IV) WHICH OCCURS SIMULTANEOUSLY. BY MEANS OF COMPARISON OF MECH. AND CHEM. EXPTS. IT IS SHOWN THAT HNO SUB2 IS CHARACTERIZED BY A HIGHER REACTION RATE WITH THE INTERMEDIATE FORM OF Cr , THE OXIDIZING AGENT, THAN Pu(IV) .

UNCLASSIFIED

USSR

UDC 546.791:546.799:546.841.4

NIKOL'SKIY, B. P., MARKOV, G. S., and POSVOL'SKIY, M. V.

"Solubility of Complex Salts of Hexanitratothoreates of Quaternary

Ammonium Bases in Nitric Acid Solutions. III. Solubility as Function of Nitric Acid Concentration"

Moscow, Radiokhimiya, Vol 12, No 2, 1970, pp 272-273

Abstract: A study was made, on the example of the salt $(DMDBA)_2[Th(NO_3)_6]$, where DMDBA = dimethyldibenzylammonium, of the solubility of quaternary ammonium salts of the alkyldimethylbenzylammonia and alkylpyridinium type as a function of nitric acid concentration in the solution. For comparison, solubilities were also determined for several other complex nitrate salts of thorium with organic (trimethylbenzylammonium and dimethylbenzylamine) and inorganic (Cs^+) cations. The nitric acid concentration range was 2-10 M at 25° C. It was established that the appearance of a minimum in the curve of salt solubility was due mainly to the formation in solution of solvated forms of the quaternary base. It was also shown that the nature of the cation in the complex salt of the $R_2[Th(NO_3)_6]$ type affects the position of the minimum in the solubility curve in accordance with the ability of the cation to form solvated forms with nitric acid.

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1/2 012 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--QUATERNARY AMMONIUM BASES AS ANALYTICAL REAGENTS. 1. SEPARATION
AND DETERMINATION OF THORIUM USING N BENZYLQUINOLINIUM NITRATE -U-
AUTHOR--(03)-MARKOV, G.S., NIKOLSKIY, B.P., POSVOLSKIY, M.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 277-80
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL ANALYSIS, CHEMICAL SEPARATION, THORIUM, NITRATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1891 STEP NO--UR/0075/70/025/002/0277/0280
CIRC ACCESSION NO--AP0115710
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115710

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR THE QUANT. SEPN. AND DETN. OF TH, BASED ON TH PPTN. FROM 7-8M HNO SUB3 WITH N BENZYLQUINOLINIUM NITRATE (1). TH IS THEN WEIGHED AS (C SUB16 H SUB14 N) SUB2 (THNO SUB3) SUB6). THE EFFECT OF HNO SUB3 CONC. AND I ON THE COMPLETENESS OF TH PPTN. WERE STUDIED, OPTIMUM CONDITIONS FOR ITS QUANT. SEPN. WERE FOUND AND THE COMPLETENESS OF SEPG. RARE EARTHS AND ZR FROM TH WERE EXAMU. TH PPTS. BEST FROM 7-9M HNO SUB3; IS GREATER THAN OR EQUAL TO 99.7PERCENT TH AT A CONC. OF 1-2 G TH-L. WERE SEPD. AT A 6 FOLD EXCESS OF I. ADD TO THE SOLN. CONTG. 10-50 MG TH IN 8-15 ML SUCH AN AMT. OF HNO SUB3 TO OBTAIN A SOLN. 7.0-7.5M HNO SUB3, THEN ADD DROPWISE WHILE MIXING 3-4 ML 8PERCENT I IN HNO SUB3. KEEP THE PPT. ON A WATER BATH FOR 20 MIN AT 40DEGREES TO 50DEGREES, COOL, AND AFTER 40 MIN. FILTER ON A GOOCH NO. 3. WASH WITH 3-4 ML HNO SUB3 SOLN. CONTG. 0.5PERCENT I. DRY AT 105-10DEGREES TO A CONST. WT. FACILITY: INST. RADIUM, LENINGRAD, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SOLUBILITY OF COMPLEX SALTS OF QUATERNARY AMMONIUM BASE
HEXANITRATOTHOATES IN NITRIC ACID SOLUTIONS. II. SOLUBILITY AS A
AUTHOR--(03)-NIKOLSKIY, B.P., MARKOV, G.S., POSVOLSKIY, M.V.
COUNTRY OF INFO--USSR
SOURCE--RADIOKHIMIYA 1970, 12(2), 272-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--THORIUM COMPOUND, COMPLEX COMPOUND, QUATERNARY AMMONIUM
COMPOUND, SOLUBILITY, NITRIC ACID, CESIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605012/B03 STEP NO--UR/0186/70/012/002/0272/0278
CIRC ACCESSION NO--AP0140239

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0140239
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF (DMDBA) SUB2(TH(NO
SUB3) SUB6) (I), WHERE DMDBA WAS DIMETHYLDIBENZYLAMMONIUM (II), AS A
FUNCTION OF HNO SUB3 CONCN. AT 2-10M HNO SUB3 WAS STUDIED AT 25DEGREES.
TOTAL TH CONCN. IN SOLNS. SHOWN ON MICROFICHE. AN APPARENT MIN. ON THE
SOLY. CURVES AT 7.5-8M HNO SUB3 DISAPPEARED AFTER TAKING INTO ACCOUNT
EQUIL. OF II WITH HNO SUB3, E.G. THE FORMATION OF SHOWN ON MICROFICHE.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--03JUL70

TITLE--SUBSTITUTED HYDRAZIDES OF HYDROXY CARBOXYLIC ACIDS. LXVIII/
ALPHA, BETA, DISUBSTITUTED PHENYLHYDRAZIDES OF DIARYLGLYCOLIC ACIDS -U-
AUTHOR--BERDONSKIY, I.S., POKSYAGINA, E.YU.

COUNTRY OF INFO--USSR

SOURCE--Zh. Org. Khim. 1970, 6(1), 151-6

DATE FLELISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AZIDE, HYDROXYL RADICAL, CARBOXYLIC ACID, BENZENE DERIVATIVE,
HETEROCYCLIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1580/0562

STEP NO--08/C366/70/006/001/0151/0156

CIRC ACCESSION NO--AF0048799

UNCLASSIFIED

Acc. Nr:

AP0048799

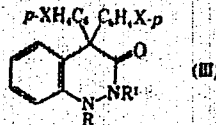
Abstracting Service: CHEMICAL ABST.

4170

Ref. Code:

UR0366

90394v Substituted hydrazides of hydroxy carboxylic acids.
 LXVIII. α,β -Disubstituted phenylhydrazides of diarylglycolic
 acids. Berdinskii, I. S.; Posyagina, E. Yu. (Perm. Gos. Univ.
 im. Gor'kogo, Perm, USSR). *Zh. Org. Khim.* 1970, 6(1), 151-6
 (Russ). The reaction of $\text{PhNRNR}'\text{COCO}_2\text{Et}$ (I) (R and R' given): Et, Me; Me,
 Et; Et, Et; Ph, Me. Reacting I with $p\text{-XC}_6\text{H}_4\text{MgBr}$ gave 70-
 99% $\text{PhNRNR}'\text{COC}(\text{OH})(\text{C}_6\text{H}_4\text{X}-p)$ (II) (R, R', and X given):
 Me, Et, H; Me, Et, iso-Pr; Me, Et, Cl; Me, Et, F; Et, Me,
 H; Et, Me, iso-Pr; Et, Me, Cl; Et, Et, Cl; Et, Et, F; Ph,
 Me, H; Ph, Me, Cl; Ph, Me, F. The direct alkylation of
 $\text{PhNRNHCOC}(\text{OH})(\text{C}_6\text{H}_4\text{X}-p)$ with Me_2SO_4 gave the following
 II (R, R', and X given): Me, Me, H; Me, Me, Me. The addn.
 of H_2SO_4 to II gives a transient coloration due to the formation
 of halochromic salts, which in 10-30 sec are converted to 3-oxo-
 1,2,3,4-tetrahydrocinnolines (III) (R, R', and X given): Me,



Et, H; Me, Et, iso-Pr; Me, Et, Cl; Et, Et, Cl; Et, Me, Cl;
 Ph, Me, H; Ph, Me, F. CPJR

REEL/FRA
 19800562

USSR

UDC: 621.396.621.59:621.396.669.8(088.8)

POSYAKOV, S. N., NERONOV, V. V., LITVIN, V. M.

"A Reception Device for Radio Communications Lines With 'Floating' Frequency"

USSR Author's Certificate No 259969, filed 26 Jul 68, published 4 May 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D55 P)

Translation: This Author's Certificate introduces a device which contains a wide-band amplifier with automatic control of the transfer constant, a frequency converter, a heterodyne with "floating frequency", a controlled synchronization module, and a narrow-band IF amplifier. To improve the effectiveness of suppressing concentrated interference and prevent this type of interference from overloading the signal processing channel, the device is equipped with an additional frequency converter and a stable fixed frequency oscillator which together effect transfer of the output signal spectrum from the wide-band amplifier into the range of variation of the floating-frequency heterodyne. The heterodyne voltage and the output voltage of the additional frequency converter are fed to the inputs of a low-frequency beat detector made in the form of a frequency converter, low-frequency filter and inertial amplitude detector connected in series. The output voltage of the inertial amplitude detector is fed to the transfer constant control circuit of the wide-band amplifier through an isolating capacitor which prevents the possibility of zero beats between the heterodyne voltage and signals from the radio line transmitter. To prevent the possibility of these low-fre-

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POSYAKOV, S. N. et al., USSR Author's Certificate No. 259969

quency beats in the case of a low degree of synchronism, the heterodyne is connected to the frequency converter in the main channel through a delay line which introduces a time lag greater than the ratio of the passband of the narrow-band IF amplifier to the rate of change in the "floating" frequency, but less than the time constant. N. S.

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USSR

UDC 669.1.011.053.7

POSYSAYEV, A. A., Ministry of Ferrous Metallurgy USSR

"All-Union Conference on Improving Metal Production Quality"

Moscow, Stal', No 11, Nov 73, pp 1036-1037

Abstract: In May, 1973, an All-Union Conference on Improving Metal Production Quality was held in Zaporozh'ye. Participants of the conference gave and discussed reports on the basic directions of increasing metal production quality at ferrous metallurgy enterprises (N. I. SHEFTEL, Assistant Chief of the Main Technical Administration, Ministry of Ferrous Metallurgy USSR), on meeting specifications of State Standards by the enterprises (A. A. POSYSAYEV, Chief of Quality Control, Ministry of Ferrous Metallurgy USSR), and on the basic directions of scientific research on improving metal production quality with respect to development of standards (A. I. OSIPOV, Assistant Director, Central Scientific Research Institute of Ferrous Metallurgy). Reports given had to do with reducing the amount of scrap steel, resulting from too much sulfur, phosphorus, or nitrogen, by different methods which was the purpose of the conference -- to standardize methods for making steel so that all steel-producing enterprises could insure

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USSR

POSYAYEV, A. A., Stal', No 11, Nov 73, pp 1036-1037

a high-quality product. Currently, almost all the steel plants, metallurgical combines, etc., have their own procedures for reducing scrap output.

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Steels

USSR

UDC 669.14.018.841

BABAKOV, A. A., ZHADAN, T. A., LEVIN, F. L., POSYSAEVA, I. I., and FEL'DGANDLER, E. G. (Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

"Low-Carbon Corrosion-Resistant Steels"

Moscow, Stal', No 9, Sep 72, pp 836-839

Abstract: A survey is presented of investigations on corrosion-resistant -- especially low-carbon -- chromium-nickel steels of the austenitic class. The effect of various components of chemical composition on the susceptibility of the steels to intercrystalline corrosion is considered. It is recommended that carbon content in the steel be reduced and that the solid solution be stabilized by special alloying to prevent the formation of excess phases (σ -phase) or carbides on the grain boundaries. The corrosion properties of new, recently developed steels of the austenitic and ferrite-austenitic class are discussed.

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USSR

UDC 669.15.018.8:620.196.2

POSYLAJEVA, L. I., SMIRNOVA, A. V., and BRODOVA, V. N.

"The Nature of Intercrystalline Corrosion in Low-Carbon Fe-Cr-Ni-Mo-Austenitic Steel"

Sb. tr. TsNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp. 77, pp 86-92 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 31595 by authors)

Translation: Austenitic steel of the type 000Kh20N20M4 with varying degree of niobium stabilization was studied. The principal excess phases in steel without Nb are chromium carbides; in understabilized steel, the sigma phase, NbC, and dispersed chromium carbides of the type $Me_{23}C_6$; in stabilized steel, the sigma phase and NbC. It was found that steel without Nb and understabilized steel are susceptible to intercrystalline corrosion in wet-process phosphoric acid. The reason for the appearance of intercrystalline corrosion is the formation of finely dispersed eutectic-type chromium carbides of the type $Me_{23}C_6$, which, precipitating out on the grain boundaries and in the boundary zones, cause sharp chromium depletion of solid-solution regions directly adjacent to the carbide particles. Two illustrations. One table. Bibliography with two titles.

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Steels

USSR

UDC 6 69.14.018.8

BABAKOV, A. A., POSYSAYEVA, L. I., PETROVSKAYA, V. A., and
SIDORKINA, YU. S., Central Scientific Research Institute of
Ferrous Metallurgy imeni I. P. Bardin

"New High-Alloy Corrosion-Resistant Steel Type 000Kh21N2nM4B"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 99-103

Abstract: Experimental data are presented on the properties of the new 000Kh21N2LM4B steel, designed for the manufacture of equipment for the production of double superphosphate by extraction phosphoric acid containing fluoride compounds. The chemical composition and mechanical properties of the steel are presented, as well as certain data on the corrosion resistance of the steel and its physical properties. The chemical composition is (percent):

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BABAKOV, A. A., et al., Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 99-103

C	Mn	Si	P	S	Cr	Ni	Mo	Nb
0.03	Not Over 0.6	0.6	0.03	0.02	20-22	20-22	3,4-3.7	% CX15 up to 0.8

The steel has high resistance to intercrystalline and knife-line corrosion.

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USSR

UDC 620.196.2.001.5

POSYSAYEVA, L. I., SMIRNOVA, A. V., and BRODOVA, V. N.

"The Nature of Intercrystalline Corrosion in Low-Carbon Fe-Cr-Ni-Mo Austenitic Steel"

Spetsial'nyye Stali i Splavy (Special Steels and Alloys -- Collection of Works), No 77, Metallurgiya Press, 1970, pp 86-92

Translation: A study is made of type 000Kh20N20M4 austenitic steel with various degrees of stabilization by niobium. The primary excess phases in the steel without niobium are chromium carbides; in the incompletely stabilized steel -- the σ phase, NbC and dispersion chromium carbides such as $Me_{23}C_6$; in the stabilized steel -- the σ phase and NbC.

It is established that the steel without niobium and the incompletely stabilized steel are inclined to intercrystalline corrosion (ICC) in extraction phosphoric acid.

The reason for the appearance of ICC is the formation of finely dispersed eutectic-type chromium carbides such as $Me_{23}C_6$, which, separating on the grain boundaries and in the boundary zones, cause a sharp chromium impoverishment of sectors of the solid solution immediately adjacent to the carbide particles. 2 figures; 1 table; 2 biblio. refs.

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Steels

USSR

UDC 6 69.14.018.8

BABAKOV, A. A., POSYSAYEVA, L. I., PETROVSKAYA, V. A., and
SIDORKINA, YU. S., Central Scientific Research Institute of
Ferrous Metallurgy imeni I. P. Bardin

"New High-Alloy Corrosion-Resistant Steel Type 00OKh21N2nM4B"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 99-103

Abstract: Experimental data are presented on the properties of the new 00OKh21N2LM4B steel, designed for the manufacture of equipment for the production of double superphosphate by extraction phosphoric acid containing fluoride compounds. The chemical composition and mechanical properties of the steel are presented, as well as certain data on the corrosion resistance of the steel and its physical properties. The chemical composition is (percent):

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BABAKOV, A. A., et al., Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 99-103

C	Mn	Si	P	S	Cr	Ni	Mo	Nb
0.03	Not Over 0.6	0.6	0.03	0.02	20-22	20-22	3,4-3.7	% CX15 up to 0.8

The steel has high resistance to intercrystalline and knife-line corrosion.

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Steels

USSR

UDC 669.14.018.295

POTAK, YA. M., Vysokoprochnyye stali (High-Strength Steels), Moscow, Metallurgiya, 1972, 208 pp

Translation of Annotation: The monograph considers chiefly the achievements of Soviet physical metallurgy in the fields of high-strength construction and stainless steels. Their structure and heat treatment are described. Properties are presented and features of application of new types of high strength steels are indicated for moderately alloyed transitional-class stainless and poorly aging, construction and stainless intensively aging steels.

Significant attention is devoted to various types of brittle failure and measures for avoiding them. Practical recommendations are indicated for application, as is the technology of processing components of high-strength steels.

The monograph is intended for scientific workers, metallurgical engineers, and thermal engineers. 59 figures, 33 tables, 138 bibliographic citations.

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POTAK, YA. M., High-Strength Steels, Moscow, Metallurgiya, 1972, 208 pp

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Mechanical Properties

USSR

UDC 669.14.018.8:620.18:620.17

VOZNESENSKAYA, N. M., IZOTOV, V. I., UL'YANOVA, N. V., POPOVA, L. S., and
POTAK, YA. M.

"Structure and Properties of High-Strength 1Kh15N4AM3 Stainless Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, 1971, pp
32-35

Abstract: The article describes results of a study of the effect of tempering temperature on the structural state and mechanical properties of 1Kh15N4AM3 (EP-310) stainless steel of the transition austenitic-martensitic class. Industrial electroslog-refined steel was used for the study. It was found that after tempering at 200° C the steel has higher mechanical properties (ductility, impact strength, and crack propagation energy) than widely-used structural high-strength steels (30KhGSNA) or maraging steels. The high strength is determined by a high dislocation density, the presence of twins, and the retention of a sufficient quantity of carbon and nitrogen in the solid solution. Tempering at 300-350° C causes a certain decline in strength and an increase in ductility and impact strength as a result of reduced car-

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VOZNESENSKAYA, N. M., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, 1971, pp 32-35

bon and nitrogen content of the solid solution, with retention of high dislocation density and distortions of the second kind. No precipitations are found with the decrease in the number of interstitial atoms in the solid solution. At 450-500° C there is secondary hardening, consisting in the formation of highly dispersed particles of the chromium carbonitride M_2X , accompanied by a slight reduction in ductility and impact strength and a significant decrease in crack propagation energy. The structure is characterized by a decrease in the dislocation density and a significant decrease in distortions of the second kind. At 550-650° C there is reverse $\alpha \rightarrow \gamma$ transformation. The transformation begins at about 575° C, with the maximum amount of stable austenite forming after heating to 625-650° C for 1-2 hours. At 650-700° C there is a decrease in strength, with formation of the carbides $M_{23}C_6$ along grain body and boundaries.

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USSR

UDC 669.14.018.258.8:669-973

KAGAN, YE. S., POTAK, YA. M., SACHKOV, V. V., KOZLOVSKAYA, V. I.,
GRIKUROV, G. N., All-Union Scientific Research Institute of
Aviation Materials

"Stainless Steel of Increased Strength for Cryogenic Temperatures"
Moscow, Metallovedeniye, No 10, 1971, pp 18-20

Abstract: The mechanical properties of the 000Kh11N10M2T (EP678) hardened steel and its welded joints were experimentally investigated at temperatures up to -253°C . Standard steel specimens and specimens with cracks showed a high ductility and low notch sensitivity. With regard to mechanical properties, the investigated steel at -253°C is not inferior to the widely used 30KhGSNA steel at 20°C . The relatively slow cooling in soldering from 980 to 700°C has little effect on the steel plasticity, due to the negligible change of solubility of carbides in this temperature interval. Welded steel joints, without and with additives, possess high plasticity and show a completely ductile fracture from tangential stresses in tests up to -253°C . 000Kh11N10M2T steel is a promising material for cryogenic technology due to its

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USSR

KAGAN, YE. S., et al, Metallovedeniye, No 10, 1971, pp 18-20
high yield point ($\sim 90 \text{ kg/mm}^2$) at 20°C and its applicability up
to -253°C . 2 illustrations, 1 table, 5 bibliographic references

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USSR

UDC 669.15.018.8(088.8)

FEDOTOVA, L. S., ALEKSEYENKO, M. F., POTAK, YA. M., BELYAKOVA, V. A., ORZHEKH-
OVSKIY, YU. F., SHEPETOV, V. A., ~~TOPILIN, V. V.~~, DORONIN, V. M., KLYUYEV,
M. M.

"Stainless Steel"

USSR Author's Certificate No 276434, Filed 25 Jul 68, Published 13 Oct 70
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 41637P)

Translation: A steel for operation at temperatures up to 600° is proposed with the following composition (in %): C 0.05-0.09, Cr 10.5-12, Ni 1.4-1.8, Mo 0.35-0.5, Nb 0.06-0.15, V 0.15-0.25, Si < 0.6, Mn < 0.6, Ce < 0.02. The ratio of the alloying elements satisfies the formula $0.68\% \text{ Cr} + (\% \text{ Mo} + \% \text{ V} + \% \text{ Si}) + 0.5\% \text{ Nb} - (30\% \text{ C} + \% \text{ Ni} + 0.5\% \text{ Mn}) < 6.6$. After quenching from 1,000° and tempering at 570°, at 20, 500, and 550° the steel has σ_B of 120, 70, and 55 kg/mm², σ_T of 100, 75, and 55 kg/mm², δ of 12% and ψ of 60-65%, respectively; σ_{500}^{100} and σ_{550}^{100} are 56 and 32 kg/mm², respectively.

1/1

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Mechanical Properties

USSR

UDC 669.15.018.8

SAGALEVICH, YE. A., POTAK, YA. M.

"Effect of Delta Ferrite on the Mechanical Properties of Martensitic Stainless Steels"

Povysh. konstruktivn. prochnosti staley i splavov. No 2 --- V sb (Improving the Structural Strength of Steels and Alloys. No 2 -- collection of works), Moscow, 1970, pp 103-106 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I609)

Translation: A study was made of the effect of δ -ferrite on the mechanical properties of two melts of martensitic stainless steels with the following composition (in %): A -- C 0.065-0.079, Cr 13.28-13.48, Ni 2.54-7.12, Al 1.01-1.03, Mn 0.5, Si 0.6, N -- C 0.054-0.063, Cr 16.12, Ni 0.09-4.18, Mn 0.2, Si 0.15. The steel was quenched at 1,000-1,100° and tempered at 300°. The presence of 23% δ -ferrite in the steel of melt A does not lower a_{II} at room temperature; however, at -70° the value of a_{II} drops catastrophically. In samples of the melt N, the presence of 19% δ -ferrite lowers a_{II} sharply even at room temperature. This obviously is connected with the fact that the steel of melt N has coarser grain than the steel of melt A. Raising the tempering temperature to 500° intensifies the negative effect of the δ -ferrite. This is 1/2

USSR

SAGALEVICH, YE. A., et al., Povysh. konstruktivn. prochnosti staley i splavov.
No 2, Moscow, 1970, pp 103-106

obviously connected with the phenomenon of 475° embrittlement which is exhibited especially sharply in ferrite. There are 3 illustrations, 1 table, and a 2-entry bibliography.

2/2

- 37 -

USSR

UDC 539.5

TRANTSEVICH, Ya. V., POPOVA, L. S., POTAK, Ya. M., SUKHOTIN, A. M.,
GRIKUROV, G. N., ANTROPOV, N. P., Moscow, Tbilisi, Leningrad

"Study of Mechanical Properties of High Strength Stainless Steel of Transition Class EP288 [Kh16N6, SN-2A] at Cryogenic Temperature"

Problemy Prochnosti, No 10, 1971, pp 97-100.

Abstract: The purpose of this work was to study the properties of one of the most common chrome-nickel low-carbon steels in class EP288 at cryogenic temperatures. The studies were performed using experimental melts distinguished by their low carbon and chromium contents and varying contents of austenite in the steel structure. Heat treatment of the steel included hardening in water from 1,000°C, at which level dissolution of carbides occurs, cold treatment -70°C (2 hours) and tempering at 250°C (1 hour). The data indicated that type EP288 steel with the nominal composition, as well as all experimental melts except for one, has high ductility and impact toughness, including high impact toughness of specimens with cracks at down to -253°C. The nominal steel has high strength at both room and cryogenic temperatures, the level of which increases with decreasing test temperature.

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USSR

TRANTSEVICH, Ya. V., et al., Problemy Prochnosti, No 10, 1971, pp 97-100

It is interesting to note that the strength of EP288 steel determined under such rigid test conditions as rupture of specimens with fatigue cracks at -196°C is retained or even increased in comparison to the strength of smooth specimens.

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USSR

UDC 615.28:547.337.3

SHAPILOV, O. D., RACHINSKIY, F. YU., OSIPYAN, V. T., DEKEL'BAUM,
A. B., ~~POTANENKO, T. G.~~, KRUMENINA, A. A., Military Medical
Academy imeni S. M. Kirov, Leningrad

"Hexamethyleneimonium Compounds Containing Alkoxy-, Hydroxy-
and Cyanoalkyl Substituents at the Quaternary Nitrogen Atom, and
Their Bactericidal Properties"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 2, Feb 71, Vol 5,
pp 19-22

Abstract: Hexamethyleneimonium compounds with alkyl, carb-
alkoxymethyl, phenoxyethyl and other substituents with 17 to 21
carbon atoms at the N exhibit marked bactericidal action; ammonium
compounds with alkoxymethyl groups at the quaternary nitrogen atom
are both good bactericides and highly water-soluble.

The author obtained a number of hexamethylmonium compounds by
alkylation of tertiary derivatives of hexamethylenimine, and also
some highly water-soluble compounds through synthesis of substances
1/2

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SSR

SHAPILOV, O. D., et al, Khimiko-Farmatsevticheskiy Zhurnal,
No 2, Feb 71, Vol 5, pp 19-22

with cyanoethyl and cyanomethyl groups at the quaternary nitrogen
atom. Thirty-six compounds in all were studied for bactericidal
and other properties.

Some 30 of these were quite effective against E. coli and
Staphylococcus aureus, and were moderately or highly water-
soluble. Physical and bactericidal properties are given in the
paper.

2/2

USSR

YUSHKOV, V. I., POTANIN, V. N., KHOLODKOV, V. K., GRUZINOV, V. K., SHCHU-
KIN, Yu. P.

"A Plasmatron With Magnetic Arc Stabilization"

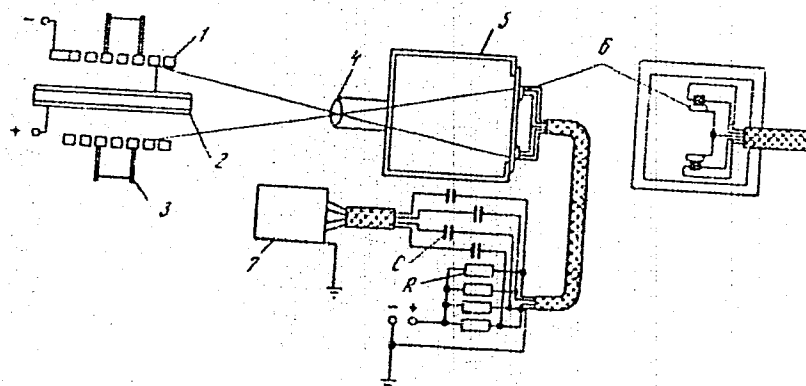
Moscow, Khimiya i Fizika Nizkoterperaturnoy Plazmy, Moscow University
Press, 1971, pp 62-64

Abstract: The authors investigate the behavior of an arc on a pilot model of a plasmatron with magnetic stabilization (diagrammed in the figure). The central uncooled graphite electrode 2 with outside diameter of 30 mm and the outer water-cooled copper electrode 1 of helical type with inside diameter of 50 mm are connected to a DC source. The outer conductor is surrounded by stabilizing coil 3 connected to an AC source. The arc was struck by a short, high-voltage rf pulse. The arc is rotated by the magnetic field produced by the outer electrode and the stabilizing coil. The shape of the outer electrode converts the arc to a helical line. Current alternation through the stabilizing coil reverses motion of the arc. Lens 4 projects a full-size image of the arc on the ground glass at the rear of camera 5. Four type FSK-1 resistors are fastened by pairs on the

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USSR

YUSHKOV, V. I. et al., *Khimiya i Fizika Nizkoterperaturnoy Plazmy*, Moscow University Press, 1971, pp 62-64



ground glass as shown by 6. Each of these resistors is connected in series to a load resistor R and a DC voltage source. The rotating arc is periodically projected on the photoresistors, with a resultant increase in the drop in voltage across load resistors R. The variable component of the

USSR

YUSHKOV, V. I. et al., Khimiya i Fizika Nizkotemperaturnoy Plazmy, Moscow University Press, 1971, pp 62-64

voltage from the load resistors is sent through capacitors C to the loops of oscilloscope 7. Preliminary analysis of materials obtained by this method shows that the proposed plasmatron design should be suitable for heating various gaseous and powdered materials. Two figures, bibliography of four titles.

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USSR

UDC: 629.7.018.2

TARASENKOV, A. M., POTANIN, Yu. F., MIRONENKO, A. I.

"A Model Which Simulates Longitudinal Oscillations of an Aircraft"

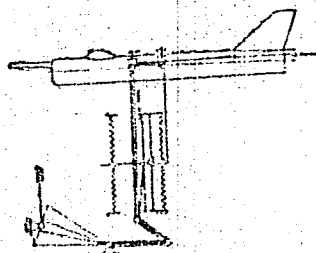
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2, Jan 72, Author's Certificate No 324645, Division G, filed 18 Nov 69, published 23 Dec 71, pp 159-160

Translation: This Author's Certificate introduces a model which simulates longitudinal oscillations of an aircraft. The model contains a fuselage with horizontal stabilizers and hinged elevator, control levers, clamps and measuring equipment. As a distinguishing feature of the patent, in order to demonstrate the longitudinal motion of an aircraft, the model is hinged at the center of gravity and the focus on clamped rods which move in grooves lengthwise of the model. The rods are coupled to springs and control levers. The spring for the rod fastened to the focus of the model, and the elevator, are fastened through tie rods to the control lever.

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USSR

TARASENKOV, A. M. et al., Soviet Patent No 324645



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UDC 547.1.3'821

USSR

KOST, A. N., YUROVSKAYA, M. M., MEL'NIKOVA, T. V., and POTANINA, O. I., Moscow State University imeni M. V. Lomonosov

"Chemistry of Indole. XXXIII. Pyridylethylation of the NH Group of Indole Compounds"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 2, Feb 73, pp 207-212

Abstract: Direct pyridylethylation of pyrrole, of a series of indole compounds, of carbazole and carboline was carried out taking advantage of the ability of highly polar aprotic solvents -- such as dimethylsulfoxide [DMSO] -- to activate the anion forming on the NH group to such an extent that even the relatively poorly polarized bond in 3-vinylpyridine was adequately activated for the reaction to take place. The activation by DMSO is based on the fact that in absence of protic solvents, when no hydrogen bonds can form, the anions being formed are solvated to a lesser degree and therefore are more reactive. The reaction goes especially well when excess 2-methyl-5-vinylpyridine is used, and the reaction mixture is heated to 100-200°. Metallic sodium or sodium ethoxide can be used as the alkaline reagents.

1/1

USSR

POTAPCHUK, A. N., Candidate of Biological Sciences and Master of Sports USSR

"Reaction of the Human Organism to Physical Exercise at High Altitude"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 1, 1973, p 43

Translation: We carried out investigations on 450 young people aged 19-23 who had lived in the mountains for various lengths of time. The subjects performed physical exercises and physical loads in the Pamirs at an altitude of 3,932 m. The purpose of the studies was to determine the influence of physical loads on the human organism at high altitude, as well as to pinpoint what physical loads are most acceptable under these conditions for active adaptation and what amount of time is needed for recovery.

The physical loads were: running 100 and 1,000 m, chinups (as many as possible), and a step test (a measured physical load, that is, climbing onto a stool 50 cm high for 3 min, 30 times in 1 min).

The investigations conducted showed that when physical loads of different intensity were used on persons who had lived at the given altitude for 2-3 years, ventilation increased by 105% in comparison with the data obtained after a run of 1,000 m at an altitude of 477 m, respiration was quick and broken, and the recuperative period was four times as long. The 100 m dash and the chinping caused insignificant changes in external respiration and the recuperative period differed little from that at sea level. The respiratory reaction

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USSR

POTAPCHUK, A. N., *Teoriya i Praktika Fizicheskoy Kul'tury*, No 1, 1973, p 43

to the step test was the same as for the 1,000 m run.

It was also shown that under physical loads in the mountains the pulse rate rises sharply and arterial blood pressure changes significantly. For instance, the 100 m dash and chinning are accomplished with relative ease: the pulse quickens by 70-80%, arterial blood pressure rises by 20-40%, and a comparatively rapid return to the initial values occurs. The 1,000 m run and the measured physical load (the step test) proved difficult for the subjects: the pulse was almost continuously at 217-230, maximum arterial blood pressure rose by 50-70% and the minimum blood pressure went unchanged in some subjects, declined in others, and rose slightly in a few, and the recuperative period lasted about 24 hrs, or longer for some.

Our investigations showed that the cardiac and respiratory rates are dependent on the intensity of the work performed and the atmospheric pressure.

The cardiovascular system reacted normally only to physical loads whose accomplishment required a small amount of oxygen; a physical load entailing high oxygen consumption throws the system out of the equilibrium that has been established at a given altitude.

The results obtained make it possible to draw some conclusions. In particular, the recuperative period is much longer at high altitudes than at

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USSR

POTAPCHUK, A. N., Teoriya i Praktika Fizicheskoy Kul'tury, No 1, 1973, p 43

sea level. The physiological changes caused by physical loads lasting over 1 min are significant. It is undesirable to use the 1,000 m run and measured physical load (the step test) in the initial period of adaptation in the mountains.

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USSR

UDC 535.37:548.736

PISARENKO, V. F.; POTAPENKO, G. D.

"On the Question of the Luminescence of Eu^{3+} and Tb^{3+} Ions in NaF Single Crystals"

V sb. Peredacha energii v kondensirovan. sredakh (Energy Transfer in Condensed Media -- Collection of Works), Yerevan, 1970, pp 176-183 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D798)

Translation: A study was made of the excitation spectra and the dependence of the luminescence of Eu^{3+} ions on lifetime and temperature in NaF Crystals. It was shown that the excitation spectra for the luminescence of europium ions in crystals activated by Eu^{3+} and Eu^{3+} together with Tb^{3+} were identical. It was concluded that energy transfer from Tb^{3+} ions to Eu^{3+} ions does not occur in NaF crystals activated by Eu^{3+} and Tb^{3+} ions at room temperature. 5 ref. V. S. Z.

1/1

1/3 015 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SYNTHESIS AND STUDY OF HEXAMETHYLENIMMONIUM COMPOUNDS AS BACTERIOIDES
-U-
AUTHOR--(04)-SHAPILOV, G.D., MAMEDOV, F.N., POTAPENKO, T.G., OSIPIYAN, V.T.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(1), 131-5
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERICIDE, PHENOL, ORGANIC SULPHUR COMPOUND, AMMONIUM
COMPOUND, ALKYL RADICAL, HALIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/0407

STEP NO--UR/0080/70/043/001/0131/0135

CIRC ACCESSION NO--AP0100890

UNCLASSIFIED

2/3 015

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100890

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PASSING DRY HCL INTO 71.5 G N (2 HYDROXYETHYL)HEXAMETHYLENIMINE IN CSUB6HSUB6. ADD ING 71.4 G SOCLSUB2, AND HEATING 1 HR AT 40DEGREES GAVE 70PERCENT SOLID N (2 CHLOROETHYL)HEXAMETHYLENIMINE HCL, THIS WITH ALKALI GAVE THE LIQ. FREE BASE, WHICH HEATED, OR TREATED WITH HSUB20 OR ALCS., WAS CONVERTED INTO A SOLID CONTG. IONIC CL. THE AMINE (26G) HEATED IN ETSUB0 6 HR WITH THE REACTION PRODUCT OF 21.5G. RHO MESUB3CCSUB6HSUB4SH AND 3 G K GAVE 50PERCENT RCSUB6HSUB4SCHSUB2CHSUB2NRSUB2 (NRSUB2 EQUALS HEXAMETHYLENIMINO) R EQUALS RHO MESUB3C, BSUB2 172-6DEGREES, SIMILARLY WAS PREPD. THE ANALOG WITH R EQUALS RHO ME, BSUB2 158-64DEGREES. SIMILAR REACTION WITH RHO-ETCSUB6HSUB4SCHSUB2CHSUB2 ONA GAVE 50PERCENT UNDISTD. RHO-ETCSUB6HSUB4SCHSUB2CHSUB2OCHSUB2CHSUB2NRSUB2, SIMILARLY WERE PREPD. RHO-MECSUB6HSUB4SCHSUB2CHSUB2OCHSUB2CHSUB2NRSUB2, 45PERCENT, BSUB1 140-5DEGREES, AND RHO-MEPRCH ANALOG, BSUB1 164-7DEGREES, NPRIME20SUBD 1.3454.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

3/3 015

CIRC ACCESSION NO--AP0100890

ABSTRACT/EXTRACT--TREATING THE APPROPRIATE AMINES WITH ALKYL HALIDES GAVE THE FOLLOWING QUATERNARY SALTS:

(RHO-RCSUB6HSUB4SCHSUB2CHSUB2NRSUB2RPRIME1) PLUSXMINUS (NRSUB2 EQUALS HEXAMETHYLENIMINO) (R, RPRIME1, AND X SHOWN): ME, CSUB7HSUB15, BR, ME, CSUB10HSUB21, BR, ME, CHSUB2COSUB2CSUB7HSUB15, CL, ME, CHSUB2COSUB2CSUB10HSUB21, CL, MESUB36, CSUB6HSUB13, BR, MESUB3C, CSUB7HSUB15, BR, MESUB3C, PHCNSUB2, CL, THE FOLLOWING RHO-RCSUB6HSUB4SCHSUB2CHSUB2CHSUB2CHSUB2NRSUB2RPRIME1 PLUSXMINUS: ME, CSUB7HSUB15, BR, ME, CSUB10HSUB21, BR, ME, CHSUB3COSUB2CSUB10HSUB21, CL, ME, CLSUB12HSUB25, BR, ET, CSUB7HSUB15, BR, ET, CSUB10HSUB21, BR, MEPRCH, CSUB5HSUB4, BR, MEPRCH, CSUB6HSUB13, BR, MEPRCH, PHCHSUB2, CL, MEPRCH, CSUB7HSUB15, BR, MEPRCH, CSUB8HSUB17, BR, MEPRCH, CSUB10HSUB21, BR, AND MEPRCH, CHSUB2COSUB2 CSUB7HSUB15, CL. BACTERICIDAL TEST DATA WERE TABULATED, THEY WERE RELATIVELY NONTOXIC TO ANIMALS AND RATHER ACTIVE AGAINST MICROORGANISMS, AND MOST ACTIVE WERE THE MEMBERS WITH DECYL SUBSTITUENTS.

UNCLASSIFIED

1.1.2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THE MECHANISM OF PLASMA LOSSES IN A STELLARATOR -U-
AUTHOR--(C5)-BURCHENKO, P.YA., VASILENKO, B.T., VOLKOV, YE.D., PAVLICHENKO,
G.S., PUTAPENKO, V.A.
COUNTRY--~~INFO~~USSR
SOURCE--MOSCC, ATOMNAYA ENERGIYA, VOL 28, NO 2, FEB 70, PP 126-129
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA OSCILLATION, LOW FREQUENCY, STELLARATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1481

STEP NO--UR/0089/70/028/002/0126/0129

CIRC ACCESSION NO--AP0123384

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

272 025

CIRC ACCESSION NO--AP0123384
ABSTRACT/EXTRACT--(U) GP-0--

ABSTRACT. A STUDY WAS MADE OF THE EQUILIBRIUM CONDITIONS AND SPECTRAL PROPERTIES OF LOW FREQUENCY OSCILLATIONS OF PLASMA OF OHMIC HEATING IN A STELLARATOR. IT IS SHOWN THAT EQUILIBRIUM IS DISRUPTED AT A MAGNITUDE BETA EQUALS 8 PI NKT DIVIDED BY H SUBO PRIME2 HIGHER THAN SOME CRITICAL BETA SUBE. ON THE BASIS OF STUDIES OF LOW FREQUENCY OSCILLATIONS CONDUCTED AT BETA LESS THAN BETA SUBE, A DEDUCTION CAN BE MADE THAT DRIFT TYPE INSTABILITIES (DRIFT DISSIPATION OR THERMOFORCE) APPEAR IN THE COLLISION PLASMA IN THE STELLARATOR. THE AUTHORS THANK V. F. ALEKSI AND S. S. MOISEYEV FOR VALUABLE REMARKS, AND A. I. ZHDANOV FOR HELP WITH THE CORRELATION TECHNIQUE.

UNCLASSIFIED

USSR

UDC 669.295:539.2:539.214

TRENOGINA, T. L., MURZAYEVA, G. V., LERINMAN, R. M., POTAPENKO, YU. I., and KAGANOVICH, I. N., Institute of Physics of Metals, Academy of Sciences USSR

"Electron-Microscope Study of Structural Changes Occurring Upon High Temperature Thermomechanical Treatment of Titanium Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 6, Dec 73, pp 1242-1252.

Abstract: The microstructural changes occurring in VT15 (beta alloy) and VT9 (alpha plus beta alloy) upon high temperature thermomechanical treatment were studied using the method of transmission electron microscopy. Particular attention was given to the influence of the duration of the pause between the end of deformation and hardening on the microstructure of the alloys. It was established that it is the creation of a polygonized structure which is responsible for the favorable combination of strength and plastic characteristics of these alloys. It is shown that as the duration of the pause between the end of deformation and hardening is increased, the increase in plasticity and decrease in strength observed results primarily from a change in the phase ratio and the dispersion of the phases.

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172 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DEFORMATION IN THE ROLLING OF SLABS IN VERTICAL ROLLS -U-
AUTHOR--(03)-ODINOKOV, YU.I., SHKLOVSKY, V.YA., POTAPKIN, V.F.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. V.U.Z., CHERNAYA MET., 1970, (2), 87-90
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL ROLLING, METAL DEFORMATION, LEAD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--2000/0539 STEP NO--UR/0148/70/000/002/0087/0090
CIRC ACCESSION NO--AP0124234
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124234

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THREE DIMENSIONAL DEFORMATION OF SLABS ROLLED IN VERTICAL ROLLS WAS STUDIED AS A FUNCTION OF THE FUNDAMENTAL ROLLING PARAMETERS USING PB MODELS, WITH SPECIAL REF. TO THE QUESTION OF THE DEGREE OF SPREAD RESULTING FROM DIFFERENT ROLLING VELOCITIES. THE RESULTS ARE CONDENSED INTO THE FORM OF GENERALIZED RELATIONSHIPS ENABLING THE DEGREE OF DEFORMATION TO BE DETERMINED AT ANY SPECIFIED LAYER; IN PARTICULAR, THESE RELATIONSHIPS SHOW THE LEVEL AT WHICH SUBSTANTIAL DEFORMATION OF THE METAL CEASES.

UNCLASSIFIED

USSR

UDC: 681.327.6

NOVOPASHENYY, G. N., POTAPKIN, V. K., Leningrad "Order of Lenin" Poly-technical Institute imeni M. I. Kalinin

"A Buffer Memory Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 20, Jul 72, Author's Certificate No 343300, Division G, filed 15 Sep 69, published 22 Jun 72, p 174

Translation: This Author's Certificate introduces a buffer memory device which contains switches with their first inputs connected together and tied to storage flip-flops while their outputs are connected to shift register cells. The device also contains recording and readout lines. As a distinguishing feature of the patent, the reliability of the device is improved by adding a reversible counter with one of its inputs connected to the readout bus and the other to the recording bus, while the outputs of the counter cells are connected to the second inputs of the switches.

1/1

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USSR

POTAPKOV, N. A. (Steklov Mathematics Institute of the USSR Academy of Sciences)

"Perturbation Theory With Variational Parameter, Inequalities and Evaluations for the Free Energy"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, June 1973, pp 407-416

Abstract: A perturbation theory scheme based on the representation of the free energy in the form of a sequence $F_k(\sigma_k)$ (σ_k is the ordering parameter) is proposed. From the minimum condition for $F_k(\sigma_k)$ the equation of state is obtained and the temperature of the phase transition $T_c^{(k)}$ is determined. For the Heisenberg and Ising models the term F_2 is calculated (F_1 being the well-known molecular field approximation), and for the Ising model the inequality $F_1 > F_2 > F$ is deduced, showing that F_2 is a better approximation than F_1 . The temperature $T_c^{(2)}$ is found for both models. The behavior of the free energy expansion for $T \rightarrow 0$ is investigated.

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SCME OBSERVATIONS ON THE EFFECTIVENESS OF MONDMYCIN IN THERAPY OF
GONORRHEA IN MEN -U-
AUTHOR--(05)-GRIGORYEV, V.YE., POTAPNEV, F.V., SKURATOVICH, A.A., GRACHEV,
YU.I., VOSKRESENSKAYA, G.A. *P*
COUNTRY OF INFO--USSR

SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 4, PP 59-62

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBIOTIC, VENEREAL DISEASE, MONDMYCIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0936

STEP NO--UR/0206/70/000/004/0059/0062

CIRC ACCESSION NO--AP0109093

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109093

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVENESS OF MONOMYCIN IN THERAPY OF GONORRHEAL INFECTION IN 145 MEN WAS STUDIED. THE DRUG WAS INJECTED INTRAMUSCULARLY IN A DOSE OF 500,000 UNITS EVERY 10-12 HOURS. PATIENTS WITH ACUTE AND SUBACUTE GONORRHEAL URETHRITIS RECEIVED A COURSE DOSE OF MONOMYCIN OF 2,000,000 UNITS. FOR PATIENTS WITH COMPLICATED AND CHRONIC FORMS OF GONORRHEAL INFECTION COURSE DOSES WERE INCREASED TO 3,500,000-4,000,000 UNITS. GONOCOCCI DISAPPEARED FROM THE SECRETE IN THE MAJORITY OF PATIENTS WITHIN 6-7 HOURS. ETIOLOGICAL CURE AFTER MONOMYCIN THERAPY WAS ACHIEVED IN 96.6PERCENT OF PATIENTS. FACILITY: OTDEL GONOREI TSENTRAL'NOGO N I KOZHNO VENEROLOGICHESKOGO INSTITUTA MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

USSR

UDC: 621.317.7:621.317.335.029.64

GUDKOV, O. I., CHUGUNOV, Yu. I., POTAPOV, A. A.

"Instruments for Measuring the Permittivity and Loss Tangent of a Material on Superhigh Frequencies, and the Dielectric Characteristics of Mica on a Frequency of 9.2 GHz"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 88-89 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A364)

Translation: A brief report is given on laboratory microwave dielectricometers of the "Resonance" and "Helium" types developed by the Angarsk Affiliate of the Experimental Design Office of Automation for substances in any phase. Operation of the instruments is based on measurement of the frequency difference of two resonators -- a working resonator and a measurement resonator. A table is given of the results of measurement of the permittivity and loss tangent of crystals of natural mica from East Siberian deposits. E. L.

1/1

USSR

UDC 62-531.4

DOROSHKEVICH, Ye.M., KOZLOV, E.P., POTAPOV, A.A., SHAPKAYTS, G.I.

"A Tracking System"

USSR Author's Certificate No 263014, Filed 23/12/68, Published 8/06/70
(Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i
Vychislitel'naya Tekhnika, No 12, 1970, Abstract No 12 A277P)

Translation: A tracking system is suggested containing a sensor, sine-cosine transformer, amplifiers, a phase detector, and an actuating motor. It differs in that in order to increase accuracy, it contains an additional commutator, one input of which is connected to an external reference voltage source, the other to the cosine winding of the sine-cosine transformer rotor, while the output is connected to the reference voltage input of the phase detector.

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USSR

UDC 576.895.771-095.18:615.285.7:632.936.3

POTAPOV, A. A., and VLADIMIROVA, V. V., Entomology Section, Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of Health USSR, Moscow

"The Mechanism of Action of Repellent Fumes on Mosquitoes and Other Blood-Sucking Insects. Communication 4"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyy Bolezni, Vol 39, No 6, 1970, pp 718-722

Abstract: The sensitivity of mosquitoes and horseflies to the fumes of such repellents as furan-2-carboxylic acid diethylamide (P-320), benzoic acid diethylamide (P-2), etc. is closely related to the insects' vital processes, particularly to the intensity of respiration and gas exchange. They are most active when the temperature and relative humidity are optimum and therefore react most sharply to repellents. The repellent effect is possible only in close proximity to the surface treated with the substance, i.e., at fairly high concentrations of fumes in the air. This determines the amount of fumes that may penetrate into the trachea and the degree of irritation of the insects' olfactory receptors. The meteorological and other conditions intensifying physiological functions (respiration

1/2

USSR

POTAPOV, A. A., and VLADIMIROVA, V. V., Meditsinskaya Parazitologiya i Parazitarnyy Bolezni, Vol 39, No 6, 1970, pp 718-722

and gas exchange in particular) also increases the sensitivity of insects to repellents. Repellents resemble insecticides in this respect.

2/2

USSR

UDC 531.383;62.752.4

POTAPOV, A. A., Kazan' Aviation Institute

"Concerning Design Damping in Gyroscopic Devices"

Leningrad, IVUZ, Priborostroyeniye, No 11, 1970, pp 75-78

Abstract: The article deals with a free gyroscope with the source of design damping forces in the gyro housing. Methods of the applied theory of elastic oscillations are used to obtain expressions for taking the design damping forces into account in the equations of motion of the gyroscope, with arbitrary articulation design. 1 figure, 2 bibliographic entries.

1/1

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P
USSR

UDC: 621.396.669.8:621.3.078-503.53

DOROSHKEVICH, Ye. M., KOZLOV, E. P., POTAPOV, A. A., SHAPKAYTS, G. I.

"A Tracking System"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 18, 1970, Author's Certificate No 271617, filed 23 Dec 68, p 46

Abstract: This author's certificate introduces a tracking system which contains a pickup, sine-cosine transformer, circuit for suppression of quadrature interference made in the form of a key controlled by a full-wave rectifier with angle cutoff, amplifiers, a phase detector, and an actuating motor. As a distinguishing feature of the patent, the precision and reliability of the system are improved by adding a minimum signal amplitude limiter connected in parallel with the circuit for suppression of quadrature interference. The cosine winding of the sine-cosine transformer rotor is connected to the input of the full-wave rectifier.

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1/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PRIMARY LABORATORY AND FIELD TRIALS OF REPELLENTS AGAINST GNATS ON
THE TISSUE -U-
AUTHOR-(02)-POTAPOV, A.A., KOSHKINA, I.V. P
COUNTRY OF INFO--USSR, UNITED STATES
SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLEZNI, 1970, VOL
39, NR 1, PP 45-49
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INSECT REPELLENT, TEST METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0087

STEP NO--UR/0358/70/039/001/0045/0049

CIRC ACCESSION NO--AP0103767

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103767

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A BRIEF DESCRIPTION OF METHODS OF PRIMARY TESTS OF REPELLENTS ON CLOTH AND NETS APPLIED IN THE USA AND THE SOVIET UNION ARE PRESENTED. ON THE BASIS OF THEIR OWN EXPERIENCE, THE AUTHORS RECOMMEND TO USE SMALL PIECES OF LIGHT CLOTH SO THAT EVERY TEST INCLUDES THE REFERENCE AND CONTROL. THE QUESTIONS CONCERNING BETTER CONDITIONS FOR CARRYING OUT OF THESE TRIALS AND CRITERIA FOR EVALUATION OF NEW DRUGS ARE DISCUSSED.

UNCLASSIFIED

USSR

UDC 621.375.4+62-83

GLUKHAREV, A. A., DOROSHEVICH, Ye. M., POTAPOV, A. A., FEDOROV, A. V.,
FILATOV, G. I.

"A Power Amplifier"

USSR Author's Certificate No 321916, filed 19 Sep 70, published 24 Jan 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9,
Sep 72, Abstract No 9A81 P)

Translation: As a distinguishing feature of the proposed power amplifier, operational reliability is improved by adding a DC correcting link connected between a phase-insensitive rectifier and a transistorized controlled resistor. One illustration. V. T.

1/1

USSR

UDC 595.771/.772-19(470.46)

POTAPOV, A. A., VLADIMIROV, V. V., MEL'NIK, T. D., and BOGDANOVA, Ye. N.,
Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Mart-
sinovskiy, Ministry of Health USSR, Moscow

"The Species Composition and Diurnal Activity of Mosquitoes and Gadflies in
the Lower Volga Delta"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1, Jan/
Feb 73, pp 5-11

Abstract: Observations carried out in the lower Volga delta (Obzhorsk district
of the Astrakhan' Reservation) through Jun/Aug in 1966-67 indicated that 6
mosquito species, 12 gadfly species, and 2 gnat species breed there. The most
numerous species of mosquitoes were *Aedes vexans* and *Anopheles hircanus* and the
most numerous species of gadflies *Hybomitra acuminatus* and *H. peculiaris* and also
(in 1966, a year of high floods) *Chrysops relictus* and *Chr. flavipes*. The
maximum activity of mosquitoes and gnats, as far as attacks on humans were con-
cerned, was in the morning and evening hours, and the maximum activity of gad-
flies in the daytime. Among mosquitoes only *Ae. vexans* and *Ae. caspius* attacked
in the daytime in the shade - *An. hircanus*, *An. maculipennis*, and *Mansonia*
richiardi mosquitoes became active in the cool air after dark. Of gadflies
1/2

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POTAPOV, A. A., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1, Jan/Feb 73, pp 5-11

with mass occurrence the most thermophilic were *Chr. relictus* and *H. peculiaris*, which attacked at the hottest time in the afternoon. In the evening, when inversion air currents developed, *A. vexans* mosquitoes were displaced upwards to the tree tops.

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USSR

UDC 534.252.082.75-8(068.8)(47)

KRASNIKOV, YE.N., POLYAKOV, V.YE., POTAPOV, A.I. (Leningr.inzh.-stroit.in-t--
Leningrad Civil Engineering Institute)

"Piezoelectric Transducer"

USSR Author's Certificate No 301181, filed 8 Sept 69, published 29 July 71
(from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A478P)

Translation: A piezoelectric transducer is proposed which can be used in ultra-
sonic devices (defectoscopes, measurers of velocity and attenuation of elastic
waves) which are used for nondestructive quality inspection and determination of
the physicomechanical properties of polymeric materials and products. The trans-
ducer contains an oscillator, an electrical delay line, a unit [blok] for
division of the signal, and a piezoelectric vibrator. With the object of ob-
taining pulses with a duration equal to half of the oscillation period of the
piezoelement, the piezoelectric vibrator is formed of three elements with
equal acoustic resistance, the outside of which are piezoactive and connected
with outputs of the unit for division of signals; one output of the unit direct-
ly and the other across the electrical delay line connected to the output of the
oscillator, and the central element serves as the mechanical half-wave delay line.
The circuit of the transducer is presented. 1 ill. L.K.

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USSR

UDC 681.326

KHITRIN, A. Ha., POTAPOV, A. I.

"Some Problems of Design of Automatic Diode Matrix Test Circuits"

Elektron. Tekhnika. Nauchno-tekhn. Sb. Upr. Kachestvom i Standartiz [Electronic Equipment. Scientific and Technical Collection. Quality Control and Standardization], No. 2, 1970, pp 68-75 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 4B443 by VV).

Translation: A device is described which allows testing of the operation of diode matrices to be performed automatically. A block diagram is described and several versions of realization of individual units are suggested. 6 figs, 4 biblio refs.

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USSR

UDC 621.383.292

PGTAPOV, A. M., MELAMID, A. YE., IVANOV, A. P.

"Effect of Temperature on the Parameters of the FEU-86 Photomultiplier During Storage"

Moscow, Pribery i Tekhnika Eksperimenta, No 5, 1972, pp 181-183

Abstract: The variations in the basic parameters of the FEU-86 photomultiplier during storage were measured. The measurement procedure and results are presented. At a temperature of $+50^{\circ}\text{C}$ the parameters become sharply worse. At a storage temperature of $+40^{\circ}\text{C}$ no sharp variations in the parameters are observed. The sharpest changes in the parameters of the photomultiplier take place in the first 50 to 100 hours of storage, and the greater these variations, the greater the variations will be at the end of the storage period.

Absence of correlations between the variations in noise and anode sensitivity and, primarily, between the light noise and the anode sensitivity seems unlikely inasmuch as the variation in noise must be proportional to the variation in amplification (anode sensitivity). This is explained by the variation in sensitivity of the photocathode during storage and the occurrence of additional noise not connected with the photocathode noise (optical and ion feedback). The first cause is excluded since the variation in photocathode sensitivity after the measurements was no more than 20%. The absence of the

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USSR

POTAPOV, A. M., et al., Priory i Tekhnika Eksperimenta, No 5, 1972, pp 181-183

correlation must be attributed to the occurrence of additional noise. The absence of the correlation does not permit regulation of the anode sensitivity in the automatic gain control systems by the dark or light noise of the photo-multiplier.

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USSR

UDC: 62-531

NOVOSELOV, B. V., KOBZEV, A. A., GOROKHOV, Yu. S., BALABOLOV, G. A.
and POTAPOV, A. M.

"Servo System of Combined Control"

USSR Author's Certificate No 280613, filed 30 May 69, published
1 Dec 70 (from RZh-Avtomatika, telemekhanika i vychislitel'naya
tekhnika, No. 12, 1971, Abstract No 12A167P)

Translation: The proposed device is distinguished from the known ones by its additional self-tuned block, whose output is connected to the inputs of both differentiators, one of the inputs being tied directly to the output of the first differentiator, the other being connected through a switch. Also, the system differs in that there is an additional connection to the output of the compensating device of the second low-frequency filter, and connected to its output is a third differentiator whose output is joined to the input of the switch; there is also a connection between the second differentiator of the compensating device and a relay block, with still another differentiator connected to its input. The differentiator input is tied to the output of the first differentiator. *Issued*

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USSR

UDC 621.383.292.8

LEVIN, G.E., GRISHIN, M.YE., PCTAPCV, A.M.

"Photoelectron Device"

USSR Author's Certificate No 253951, filed 5 June 68, published 16 June 70 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A243P)

Translation: A photoelectron device is proposed which consists of a photomultiplier with a high resolution time and a resonator coupled with it, which has separate channels for input and output of the signal. With the object of an increase of the signal-to-noise ratio during reception of optical signals modulated in a narrow band of the microwave range, the anode input of the photomultiplier is introduced into the resonator cavity through an input channel and has the form of a loop.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--COMPOSITION FOR REMOVING LAC DYE COATINGS -U-
AUTHOR--(05)-VOLODIN, N.L., GARIFZYANOV, G.G., RAKHIMOV, R.R., POTAPOV,
A.M., SHAROV, V.G.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 265,341
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--LACQUER, DYE, ORGANIC SOLVENT, CHEMICAL PATENT, POLYETHYLENE,
POLYAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1766

STEP NO--UR/0482/70/000/000/0000/0000

CIRC-ACCESSION NO--AA0137006

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0137006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPN. CONSISTS OF
7:3-5:5 VOL. POLYETHYLENEPOLYAMINES AND ETCH.

UNCLASSIFIED

POTAPOV, A. N.

JPRS 55341
6 March 72

UDC: 611.73.014.477-064-019

CHANGES IN SKELETAL MUSCLES ASSOCIATED WITH INACTIVITY

[Article by G.S. Katina, A.N. Potapov, Laboratory of Histology (headed by Professor V.F. Nizhnyov), Institute of Experimental Medicine, USSR Academy of Medical Sciences, Leningrad; Arkhiv Anatomii, Gistologii i Embriologii, Russian, No 11, 1971, submitted 12 August 1970, pp 74-81]

Of the many stress factors to which the organism is exposed in space flights, restricted mobility because of the limited space in the craft and weightlessness may affect the condition of the skeletal muscles first. Restricted mobility results in a small number and small scope of motions. Weightlessness affects muscles differently. In this case, the mobility of the body and its different parts is not restricted in theory, but the power load on skeletal muscles is diminished. To simulate these spaceflight factors, two series of experiments were conducted on mongrel albino male rats.

Methods

In the first series, 27 experimental animals were placed in small cages ("hypokinetic chambers") that did not allow them to move from place to place; as the rats grew they were placed in larger chambers. They were examined after being kept under these conditions for 15, 30, 45, 60, and 90 days. The same number of control rats were kept under the usual conditions.

One of the forelegs was amputated at the boundary between the middle and proximal third, so that the sites of attachment of shoulder muscles remained intact. In the second series of animals (11 rats). These animals could move freely in a spacious cell using three legs. The proximal parts of the amputated extremity were mobile, there was complete preservation of the full range of shoulder movements, but the power load on the muscles of the shoulder and shoulder girdle was diminished, so that they were not involved in maintaining the body above the support surface under the new static and dynamic conditions. The studies were conducted three to six months after amputation. Ten intact animals served as controls.

In all cases, determination was made of body weight, body weight following removal of the skin, subcutaneous cellular tissue, and internal

8

USSR

UDC: 612.766.2

KOVALENKO, Ye. A., POPKOV, V. L., KONDRAT'YEV, Yu. I., MAILYAN, E. S., GALUSHKO, Yu. S., PROKHONCHUKOV, A. A., KAZARYAN, V. A., MOROZOVA, R. S., SEROVA, L. V., POTAPOV, A. N., ROMANOV, V. S., and PISHCHIK, V. B.

"Shifts in the Functions of the Organism During Prolonged Hypolinesia"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 6, Nov/Dec 70, pp 3-9

Abstract: Rats kept immobilized for up to 170 days in special cages showed an increase in general gas exchange and rate of oxygen utilization in the muscles, and a slowing of the rate of tissue metabolism in the liver and myocardium. The level of phosphorylation in the myocardium and, to some extent, in the skeletal muscles and liver dropped. Prolonged hypokinesia also stunted the animals' growth, prevented them from gaining weight, and in some cases caused them to lose weight. Besides disturbing mineral and protein metabolism, immobilization resulted in exhaustion of the hypothalamus - pituitary - adrenal cortex system.

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USSR

UDC 621.375.82

(3)

GLAZER, A. A., NIKITINA, T. F., PANTELEYEV, V. I., PLOTNIKOV, A. F., POPOV, YU. M., POTAPOV, A. P., SELEZNEV, V. N., TAGIROV, R. I., and SHUR, YA. S.

"Using GaAs and Nd Lasers for Optical Writing on MnBi Film"

Kratkiye Soobshch. po fiz. (Brief Communications on Physics) No 12, 1972, pp 9-12 (from RZh-Fizika, No 7, 1973, Abstract No 7D1088)

Translation: The possibility of using a GaAs semiconductor laser for recording information on a ferromagnetic film of MnBi is experimentally investigated. MnBi film 700 Å thick, which has undergone condensation in a vacuum on glass substrates of 0.1-0.2 mm in thickness, is used. For recording information, a GaAs laser with a threshold current of 2 amp at 77° K and a p-n junction width of 400 μ is used. It is shown that the laser's minimum pumping current at which recording is possible is 80 amp, whereas the radiation power is 20 w. The energy density of the radiation on the film is then $6 \cdot 10^{-9}$ j/μ². With a monopulse neodymium laser, an evaluation of an information recording density equal to 2500 lines/cm is made. It is noted that the use of a semiconductor laser with a junction width not exceeding 20 μ permits reducing the power to a fraction of a watt. Bibliography of four.

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USSR

UDC 538.221

GLAZER, A. A., POTAPOV, A. P., TAGIROV, R. I., and KONSTANTINOVA, I. YU.,
Institute of the Physics of Metals, Ural Scientific Center, Academy of Sciences USSR

"Temperature Dependence of Magnetic Properties and Perpendicular Anisotropy of 'Transcritical' Films"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 36, No 6, 1972, pp 1195-1198

Abstract: A detailed understanding of the physical nature of the "transcritical" state requires a knowledge of the quantitative relation between I_s and K_{\perp} , on the one hand, and the hysteresis loop parameters and rotatable anisotropy, on the other. The article attempts to establish such a relation by studying the temperature dependence of K_{\perp} , I_s , H_s , H_c , I_r/I_s ; the "flaking" field; and the rotatable anisotropy constant in "transcritical" 86Ni-14Fe alloy films 2400 Å in width at temperatures from -196 to +200° C. The results are compared with theoretical results obtained from formulas based on the open stripe-domain structure model.

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1/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--HEAT TRANSFER CRISIS DURING BOILING WITH SUBCOOLED WATER MOVING IN
PIPES AT HIGH SPEEDS AND AT LOW PRESSURE -U-

AUTHOR--(03)--SHLYKOV, YU.P., LEONGARDT, A.D., POTAPOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--TEPLOENERGETIKA 1970, 17(3), -63-5

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--BOILING, HEAT TRANSFER RATE, STAINLESS STEEL TUBE, WATER, FLOW
VELOCITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1989/1054

STEP NO--UR/0096/70/017/003/0063/0065

CIRC ACCESSION NO--AP0107563

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0107563

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CRIT. HEAT FLOW (Q SUBCR) EXPTS. WERE CONDUCTED IN 3.6-MM INSIDE DIAM., STAINLESS STEEL TUBES ON FLOWING (16-25 M-SEC) DEAERATED H-SUB2 O SUBCOOLED (DELTAT SUBSC) 15-85DEGREES BELOW THE SATN. TEMP.; THE PRESSURE OF Q SUBCR VARIED FROM 0.5 TO 3.0 KG-CM PRIME2. EXPTL. DETD. Q SUBCR IN W-M PRIME2 AGREED TO PLUS OR MINUS 20PERCENT WITH RESULTS CALCD. FROM THE A. P. ORNATSKII (1960) Q SUBCR EQUATION. AGREEMENT BETTER THAN PLUS OR MINUS 10PERCENT WAS OBSD. WITH LITERATURE DATA IN WHICH THE Q SUBCR APPROXIMATELY EQUAL TO F(DELTAT) AT THE LOW PRESSURES WAS SIMILAR TO 10 KG-CM PRIME2. THE Q SUBCR REMAINED UNAFFECTED AT DELTAT IS SMALLER THAN 30DEGREES. FACILITY: INST. TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 681.3.06:51

ASHKINUZE, V. G., POTAPOV, B. I.

"The 'Nyanya' and 'Kontrol' Debugging Programs"

Tr. 3-y Zimney shkoly po mat. programmir. i smezhnym vopr., 1970. Vyp. 1
(Works of the Third Winter School on Mathematical Programming and Related Problems, 1970, No 1), Moscow, 1970, pp 70-92 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V745)

Translation: A detailed description is given of the NYaNYa and KONTROL' debugging programs. The purpose of these programs is to give the programmer detailed information on the operation of his program or separate fragments of that program. The proposed programs are accommodated in cells from 1000 to 1777 of the first array of the core store, and are designed for operational debugging. Upon completion of debugging, the conclusive information is printed out. Provision is made for self protection of the debugging programs from impairment by the main program. NYaNYa twists the debugged program or its individual sections and prints out information concerning commands of interest to the programmer on these

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ASHKINUZE, V. G., POTAPOV, B. I., Tr. 3-y Zimney shkoly po mat. program-
mir. i smezhnym vopr., 1970. Vyp. 1, Moscow, 1970, pp 70-92

sections. The rate of twist without printout is 160 commands per second. The rate of printout is ≈ 2 commands per second. Its information structure ensures maximum selectivity of the output information. There is an abbreviated version of NYaNYa-2 which operates with information preset from the panel. At certain points of the program being debugged, KON-TROL' compares the results obtained by this program with predetermined standards, and after detecting an error, organizes twisting of this section (by means of NYaNYa). I. Shelikhova.

USSR

UDC: 669.35'725:620.16

POLINA, T. V., POTAPOV, B. S., STERELYUKHIN, V. A.

"Erosion Wear of PER Contacts of Copper-Beryllium Alloys"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 52, Novosibirsk, 1972, pp 143-148 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8I703, by the authors).

Translation: Conditions and method of conduct of an experiment for determination of the erosion wear of film contacts are described. For the range of switched dc voltages of 3-50 v, currents 2-10 ma, it is established that material transfer is determined primarily by the switched voltage, and is practically independent of current. It is also demonstrated that the amount of material transferred in a switching cycle (closing-opening) for $V_c = \text{const}$, $I_c = 2-10 \text{ ma}$ is independent of the number of switchings N and remains constant with an accuracy of $\pm 20\%$ up to $N = 10^6$. Based on experimental data, an empirical formula is suggested, satisfactorily describing the erosion wear of film contacts of Cu-Be alloy for the range of switched voltages 20-50 v. 6 figures, 2 biblio. refs.

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USSR

UDC: 621.791.011:669.15-194

MNUSHKIN, O. S., POTAPOV, B. V., LEVIN, A. Ye., Leningrad Polytechnic
Institute imeni M. I. Kalinin

"Influence of Preliminary High-Temperature Deformation on Welded Joints in
Austenitic Steel"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 73, pp 10-12.

Abstract: The influence of high-temperature deformation of austenitic steel on the tendency of the near-seam zone to intercrystalline rupture is studied. The results indicate that high temperature deformation during welding, accompanied by slipping between grains, might intensify intergrain slippage during subsequent tests and thereby decrease the deformation capability of the welded joint.

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1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--POTATGES AS AN IMPORTANT SOURCE OF THE VITAMIN C SUPPLY IN THE
NORTH -U-
AUTHOR--(02)-SHIBRYA, G.I., POTAPOV, F.F.
COUNTRY OF INFO--USSR
SOURCE--VOPROSY PITANIYA, 1970, NR 3, PP 54-57
DATE PUBLISHED-----70
SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--VEGETABLE CROP, ASCORBIC ACID, SOIL CHEMISTRY, CLIMATIC
INFLUENCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0004 STEP NO--UR/0244/70/000/003/0054/0057
CIRC ACCESSION NO--AP0120704
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120704

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OUTCOME OF INVESTIGATIONS INTO THE VITAMIN C CONTENT IN TUBERS OF 47 REGIONAL POTATO VARIETIES CARRIED OVER A PERIOD OF MANY YEARS (1964-1967) IS REPORTED. THESE HELPED TO SINGLE OUT 12 POTATO VARIETIES WITH AN ANNUALLY RECURRENT HIGH VITAMIN C CONCENTRATION IN THE TUBERS. AN ELEVATED VITAMIN C LEVEL IN THE TUBERS INHERENT IN THESE POTATO VARIETIES PERSISTS WHEN THE LATTER ARE CULTIVATED IN AREAS WITH DIFFERENT SOIL AND CLIMATIC CONDITIONS. THESE FINDINGS AND THE DATA DERIVED FROM LITERATURE SOURCES PROMPT THE AUTHORS TO CONCLUDE THAT CULTIVATION OF POTATO VARIETIES RICH IN VITAMIN, SUCH AS FALENSKY, DRUZHBA, SEVERNAYA ROZA AND KORENEVSKY, IN THE AREAS OF NONCHERNOZEM ZONE LYING FARTHER NORTH (IVANOVSKAYA, GORKOVSKAYA, KIROVSKAYA AND OTHER REGIONS) AND SUPPLY OF SUCH POTATO VARIETIES TO NORTHERN AREAS WILL ENABLE THE VITAMIN C CONTENT IN THE DIET OF NORTHERNERS TO BE INCREASED. FACILITY: VSES. N-I INSTITUT LEKARSTVENNYKH RASTENIY, MOSCOW.

UNCLASSIFIED

1/3 021 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--HYDROXYETHYLATION OF NAPHTHENIC ACID BASED AMINES -U-
AUTHOR-(03)-NAMETKIN, N.S., YEGOROVA, G.M., POTAPOV, G.P.
COUNTRY OF INFO--USSR
SOURCE--NEFTEKHIMIYA 1970, 10(1), 116-19
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--NAPHTHENIC ACID, AMINE, CRUDE OIL, SURFACE ACTIVE AGENT,
CATALYSIS, ACTIVATION ENERGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0606 STEP NO--UR/0204/70/010/001/0116/0119
CIRC ACCESSION NO--AP0119522
UNCLASSIFIED

2/3 021

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119522

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CYCLOALIPHATIC AMINES DERIVED FROM NAPHTHENIC ACIDS FROM BAKU CRUDE OILS, B SUB1 110-30DEGREES AND 130-160DEGREES WERE ETHOXYLATED AND THE REACTION PRODUCTS STUDIED FOR SURFACE ACTIVE PROPERTIES. THE UNCATALYZED ETHOXYLATION GAVE ONLY N,N,BIS(HYDROXYETHYL)AMINES. THE REACTION CATALYZED BY SOLID KOH (0.5PERCENT) GAVE POLYOXYETHYLENAMINES WITH 2-14 OCH SUB2 CH SUB2 UNITS IN THE CHAIN, WITH AV. MOL. WT. 290-825. THE PRODUCTS HAVE A HIGH CLOUD POINT IN 1PERCENT AQ. SOLN. THE LOWERING OF SURFACE TENSION OF THE AQ. SOLN. IS PROPORTIONAL TO THE CONCN.; THE MAX. EFFECT IS SHOWN BY COMPS. WITH 6 OCH SUB2 CH SUB2 GROUPS IN THE CHAIN. THE IR SPECTRA HAVE BANDS AT 1130 AND 1260 CM PRIME NEGATIVE1 AND A BROAD BAND AT 3400 CM PRIME NEGATIVE1. THE PRODUCTS ARE USEFUL AS FLOTATION AGENTS FOR LI ORES. KINETIC STUDIES OF ETHOXYLATION WERE MADE ON THE HIGHER BOILING FRACTION AT AN INITIAL ETHYLENE OXIDE CONCN. OF 0.5 MOLE-L. THE RATE CONST. WAS CALCD. FROM THE SLOPE OF LOG DELTA P VS. TIME. FOR UNCATALYZED REACTION AT 140DEGREES, IT IS 3.0 TIMES 10 PRIME4 SEC PRIME NEGATIVE1. AUTOCATALYSIS OF THE REACTION WAS STUDIED BY ADDN. OF (HOCH SUB2 CH SUB2) SUB2-NH TO THE INITIAL REACTION MIXT. THE AUTOCATALYSIS RATE WAS DETD. FROM A SERIES OF RUNS WITH VARIED INITIAL CONCN. OF (HOCH SUB2 CH SUB2) SUB2-NH AND 0.5 MOLE-L. INITIAL ETHYLENE OXIDE CONCN. THE CATALYTIC EFFECT OF (HOCH SUB2 CH SUB2) SUB2 NH IS PROPORTIONAL TO ITS CONCN. THE AUTOCATALYSIS RATE CONST. IS 23.7 TIMES 10 PRIME3 L.-MOLE-SEC.

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119522

ABSTRACT/EXTRACT--THE ACTIVATION ENERGY OF REACTION WAS DETD. FROM THE
RATE CONST. FOR THE UNCATALYZED REACTION AT 150 AND 160DEGREES (4.0 AND
5.0 TIMES 10 PRIME4 SEC PRIME NEGATIVE, RESP.). THE CALCD. ACTIVATION
ENERGY IS SIMILAR TO 11 KCAL-MOLE. FACILITY: INST. NEFTEKHIN.
SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--1 SEP70
TITLE--ON SPECIALIZATION AND POSTGRADUATE MEDICAL TRAINING OF
OTORHINOLARYNGOLOGISTS -U-
AUTHOR--POTAPOV, I.I.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK OTORINOLARINGOLOGII, 1970, NR 2, PP 115-118
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MEDICAL TRAINING, OTORLARYNGOLOGY, POSTGRADUATE EDUCATION
POLICY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1986/0630 STEP NO--UR/0607/70/000/002/0115/0118
CIRC ACCESSION NO--AP0102616
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102616

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHYSICIAN SHOULD LEARN ALL HIS LIFE. HOWEVER, FOR THE PRACTICING PHYSICIAN THIS IS QUITE DIFFICULT. AT THE PRESENT TIME ON THE SUBJECT OF OTORHINOLARYNGOLOGY MANY COUNTRIES PUBLISH OVER 60 JOURNALS, WITH THE EXCEPTION OF ARTICLES APPEARING IN SYMPOSIA, CONFERENCES, CONGRESSES, AS WELL AS BROCHURES AND BOOKS. DAILY MEDICAL WORK MAKES IT IMPOSSIBLE TO READ THIS VAST AMOUNT OF INFORMATION. BESIDES, THIS IS AN EVER GROWING LIST OF NEW DRUGS AND EQUIPMENT THE FAMILIARIZATION WITH WHICH REQUIRES THEIR CRITICAL ASSESSMENT AND A NUMBER OF ADDITIONAL INFORMATION ON MATHEMATICS, CIBERNETICS, BIOLOGY, ELECTRONICS, BIOPHYSICS, BIOCHEMISTRY, ETC. AT PRESENT ONLY SPECIALISTS ARE REQUIRED. OTORHINOLARYNGOLOGICAL SPECIALIZATION IS EFFECTED IN INSTITUTES OF POSTGRADUATE MEDICAL TRAINING, IN HOSPITALS OF MEDICAL INSTITUTES AND IN LARGE OTORHINOLARYNGOLOGICAL CLINICS. A TWO YEAR HOSPITAL TRAINING PLAYS A PROMINENT ROLE IN THE SPECIALIZATION. OTORHINOLARYNGOLOGISTS TRAIN ACCORDING TO TWO CYCLES: GENERAL IMPROVEMENT, SEMITHEMATIC, TELEMATIC WITH PRECYCLE TRAINING, FIELD CYCLES, AS WELL AS SEMINARS SYMPOSIA HEADED BY PEDAGOGICAL STAFF OF MEDICAL INSTITUTES AND INSTITUTES OF POSTGRADUATE MEDICAL TRAINING.

UNCLASSIFIED

USSR

UDC 621.357.7:669.15'26'779(088.8)

BONDAR', V. V. and POTAPOV, I. I.

"Electrolytic Plating with Chromium Alloys"

USSR Author's Certificate No 325276, Filed 8 Jun 70, Published 25 Feb 72 (from Referativnyy Zhurnal -- Khimiya, No 21(II), 1972, Abstract No 21L311P)

Translation: The patented method differs from other by the presence of ammonium hypophosphite in the known electrolyte containing $\text{Cr}_2(\text{SO}_4)_3$ and FeSO_4 and is used for production of the corrosion-resistant, protective and decorative coatings of Cr-Fe-P magnetic alloys. Example: light, shiny coatings containing 79% Fe, 6-8% Cr, 12-15% P, with a coercive force of ≤ 1 e were prepared in an electrolyte (in g/liter) consisting of 200 $\text{Cr}_2(\text{SO}_4)_3 \cdot 5\text{H}_2\text{O}$, 75 $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$, 10 ammonium hypophosphite, at pH 1-2, temp. 20-60°C, and D_c 5-15 a/dm², with V_k [expansion unknown] $\sim 5-7\%$.

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USSR

UDC 621.774.3

TSELIKOV, A. I., BONDARENKO, YE. S., POLUKHIN, P. I., and POTAPOV, I. N.,

"Development and Wide Introduction of New Technological Processes and Tube-Rolling Mills With Helical Motion for the Production of Hot-Rolled Tubes"

Moscow, Stal', No 12, 1972, pp 1107-1111

Abstract: Production of large-diameter tubes and equipment used during production processes are reviewed. The design and production of new mills capable of accepting material at a feeding angle of 14-15 or 15-17° has made Soviet production of tubes the most advanced in the world. Introduction of two-roll and three-roll mills will further increase the production of tubes while decreasing their cost. A schematic diagram of a two-roll mill is presented. Application of new technology at several metallurgical plants in the Urals region is discussed in broad terms. The emphasis is on increasing the feeding angles of the tube metal. Three-roll mills are planned for 1973, which will increase production effectiveness by 1.8-2.0 times. Mechanical properties of tubes produced at high feeding angles are discussed.

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USSR

UDC 621.771.28

POTAPOV, I. N., POLUKHIN, P. I., BONDARENKO, Ye. S., YAMPOL'SKIY, V. M.,
FINAGIN, P. M., and TARTAKOVSKIY, Ye. K.

"Creating High Productivity Cross-Screw Pipe Rolling Mills"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya,"
1970, pp 163-171

Translation: Information is given on the designs of individual and group drives of mills, two- and three-roll working stands, and forward and rear mill tables. Industrial introduction of these designs made it possible to implement new rolling conditions which resulted in a significant rise in the productivity of pipe rolling machines and in improvement in the quality of sleeves and pipes. Five figures and 13 bibliographic entries.

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USSR

UDC 621.771.28.001.5

POLUKHIN, P. I., POTAPOV, I. N., KINAGIN, P. M., and SHEYKH-ALI, A. D.

"An Investigation of the Piercing Process on the 30-102-Type Rolling Aggregate"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 130-136

Translation: The article gives results of experimental investigations made on the TPAZO-102 tube-piercing mill of the power parameters of the piercing process in the area of large feeding angles. Measurements are made of the full pressure of the metal on the rolls, the force on the mandrel, the torsional moments, and the piercing power. The data obtained may be used in designing and calculating modern-type rolling aggregates. Six figures.

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USSR

UDC 621.771.28.001.5

POLUKHIN, P. I., POTAPOV, I. N., FINAGIN, P. M., and SHEYKH-ALI, A. D.

"An Investigation of Speed Conditions of the Piercing Process in the Area of Increased Feeding Angles and the Quality of Pipes"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 136-142

Translation: The article gives results of experimental investigations conducted on the TPAZO-102 tube-piercing mill of speed conditions of the piercing process with large feeding angles. A significant decrease in machine piercing time with an increase in the feeding angle is established. New conditions for the piercing process are developed which made it possible to improve the quality of sleeves and pipes in terms of surface condition and geometric conditions. Six figures and one table.

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